

Amendments to the Claims

1. (Currently Amended) A method of organ augmentation comprising the steps of:
transiently transfecting a first population of cells with a plasmid encoding the angiogenesis modulating agent VEGF;
~~selecting a first population of cells from the transfected cells, which contain the VEGF encoding plasmid and transiently express the VEGF angiogenesis modulating agent,~~
encapsulating the transfected cells;
selecting a second population of cells, wherein the second population of cells comprises cells of a different cell type than the first population,
suspending the first population of cells and the second population of cells in an injectable polymer matrix;
injecting the polymer matrix into a target tissue region where the first population of cells will express the VEGF angiogenesis modulating agent,
thereby inducing assimilation and differentiation of at least one of the populations of cells in the target region and augmenting organ function.
2. (Previously Presented) The method of claim 1, wherein the step of transfecting the first population of cells comprises transiently transfecting the cells such that the angiogenesis modulating agent is produced for less than three weeks.
3. (Previously Presented) The method of claim 1, wherein the first population of cells comprises undifferentiated cells.
4. (Previously Presented) The method of claim 1, wherein the first population of cells comprises vascular endothelial cells (EC).
5. (Canceled)

6. (Previously Presented) The method of claim 1, wherein the second population of cells comprises undifferentiated cells.

7. (Previously Presented) The method of claim 1, wherein the second population of cells comprises vascular endothelial cells (EC).

8. (Previously Presented) The method of claim 1, wherein the polymer matrix comprises collagen.

9. (Previously Presented) The method of claim 8, wherein the polymer matrix comprises collagen type I.

10. (Previously Presented) The method of claim 1, wherein the first population of cells express the VEGF angiogenesis modulating agent for less than about 10 weeks.

11. (Cancelled)

12. (Previously Presented) The method of claim 1, wherein the first population of cells comprises myoblasts.

13. (Canceled)

14. – 22. (Canceled)

23. (Currently Amended) A method for augmenting organ function comprising:
culturing at least a first population of cells on a matrix material to produce an organ construct;
transiently transfecting a second population of cells with a plasmid encoding an angiogenesis modulating agent, wherein the second population of cells comprises cells of a different cell type than the first population, wherein either the first or second population of cells comprises myoblasts;

encapsulating the transfected cells; and

implanting the organ construct and the transfected cells *in vivo* at one target site to replace or augment organ function, such that the transfected cells express the angiogenesis modulating agent for less than about 3 weeks.

24. (Original) The method of claim 23, wherein the matrix is decellularized tissue.
25. (Original) The method of claim 23, wherein the matrix is a hydrogel.
26. (Original) The method of claim 23, wherein the matrix is a polymer.
27. (Canceled)
28. (Original) The method of claim 23, wherein the angiogenesis modulating agent is VEGF.
29. (Previously Presented) The method of claim 23, wherein the method further comprises assimilating the transfected cells into a tissue layer.
30. (Canceled)
31. (Canceled)
32. (Canceled)
33. (Previously Presented) The method of claim 23, wherein the organ construct and the transfected cells are each implanted *in vivo* at a plurality of target sites.
34. (New) The method of claim 1, wherein the step of encapsulating the transfected cells further comprises using microspheres.

35. (New) The method of claim 1, wherein the step of encapsulating the transfected cells further comprises using alginate-PLL capsules.

36. (New) The method of claim 23, wherein the step of encapsulating the transfected cells further comprises using microspheres.

37. (New) The method of claim 23, wherein the step of encapsulating the transfected cells further comprises using alginate-PLL capsules.